An evaluation of Henderson's Nursing Need Model and how it can be adapted for use in Veterinary Nursing

Abstract

Henderson's Nursing Need model is a nursing model of care which is used in human nursing. It is based on fourteen fundamental needs that are said to involve every aspect of the patient. Henderson believes that if nursing interventions use these fourteen fundamental needs as a framework, this will aid the patient in becoming independent again which is the overall aim. However, as Henderson's model was intended for human use, there are aspects that are not appropriate for use in veterinary patients. Therefore, this article illustrates how it can be adapted for use on veterinary patients, using the nursing process as a structure.

Keywords: Henderson, fundamental needs, nursing diagnosis, assess, plan, implement, evaluate

Key points:

Henderson's Nursing Need model is a nursing model of care that has been made for use in human nursing practice, it is based on fourteen fundamental needs.

Using a nursing model of care when looking after patients, provides a holistic view to nursing.

Henderson's model provides a good structure to the nursing assessment due to the list of fundamental needs. However, some of the needs have been removed or changed to make it more appropriate to animals.

The Nursing Needs Model does not incorporate a nursing diagnosis, therefore this has been included in the veterinary adaptation by highlighting any problems the patient has and what nursing interventions are needed.

In the veterinary adaptation, more structure incorporated in planning nursing care, meaning aspects of care are less likely to be missed.

Evaluation is a crucial aspect missing from Henderson's nursing need model. In the adaptation, a dedicated section has been incorporated to ensure that the nursing interventions are benefiting the patient and improving their condition.

Introduction

A nursing model is a description of how to plan, systematically implement and evaluate nursing care (Jeffery, 2006). They are increasingly being introduced allowing veterinary nurses to develop their skills (Wager and Welsh, 2013) in implementing nursing care for veterinary patients providing a more holistic approach, to ensure aspects of care are less likely to be overlooked. Nursing models ensure that nursing

care is patient-orientated, rather than primarily focusing on their presenting problem (Jeffery, 2006). For example, the patient-orientated approach of a feline patient in heart failure would take into account their stress levels, which could have a negative impact on their condition compared with just focusing on their heart rate, pulse quality and respiratory rate. Care plans allow nurses to work towards clear goals, but also enable different healthcare professionals, such as veterinary surgeons and physiotherapists, to have a better understanding of how the patient is coping in the hospital as they can clearly see what nursing interventions are being carried out (Bowes, 2015).

It is important to distinguish between a nursing model and the nursing process: the nursing process uses five steps in a cyclical manner to outline how nursing care is structured. This allows veterinary nurses to continuously evaluate the patient and create a framework for how the nursing care is approached (*Figure 1*). Nursing models guide nurses in the decision-making associated with the steps of the nursing process; when used in conjunction with the nursing process they can enable nurses to deliver a high standard of individualised patient care, as a nursing model incorporates aspects that are missing from the nursing process (Lock, 2011). Nurses must consider numerous, potentially competing factors, when making decisions to meet patient needs (Tanner, 2006). For instance, the nurse caring for a patient with a fractured femur would have to consider their need to urinate and defecate alongside their anorexia as a result of the pain from the fracture.

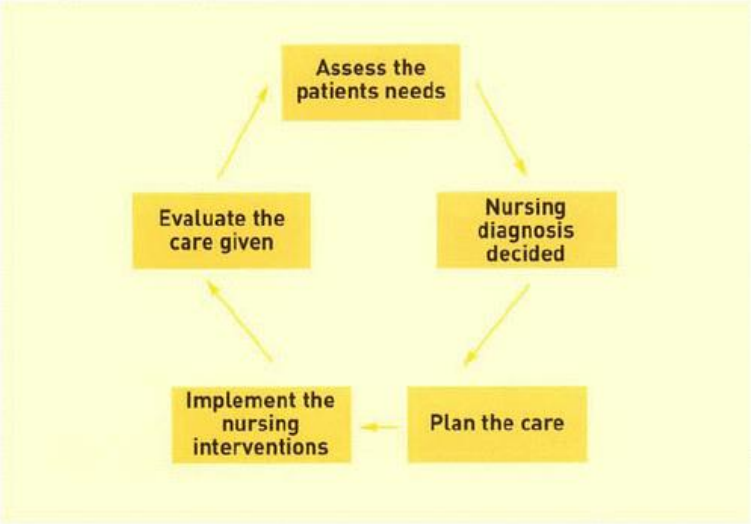

Figure 1: The Nursing Process. (Orpet, 2011)

There is only one nursing model made specifically for application in animals compared with those used in human nursing (Nelson and Welsh, 2015). This model, designed by Orpet and Jeffery, is The Ability Model; it focuses on 10 abilities that the patient should be able do, including the ability to eat, drink and urinate (Nelson and Welsh, 2015). This article will focus on Henderson's nursing needs model and how

this can be adapted for use in veterinary patients, using the nursing process as a framework.

Nursing Needs Model

Virginia Henderson was an American theorist who believed that the patient's most important aspect was their ability to be as independent as when they are in full health. The priority of her nursing care was therefore to assist the patient in regaining their independency (Ahtisham and Sommer, 2015). She shaped the idea that each patient has 14 fundamental needs and these provide the basis for effective nursing interventions to be developed (Ahtisham and Sommer, 2015). The fundamental needs are shown in *Table 1*.

1	Physiological Needs	Breathe normally
2		Eat and drink adequately
3		Eliminate body wastes
4		Move and maintain desirable postures
5		Sleep and Rest
6		Select suitable clothes; dress and undress
7		Maintain body temperature within a normal range by adjusting clothing and modifying the environment
8		Keep the body clean and well-groomed and protect the integument
9		Avoid dangers in the environment and avoid injuring others
10	Psychological Needs	Communicate with others in expressing emotions, needs, fears or opinions
11	Spiritual and Moral Needs	Worship to one's faith
12	Sociological Needs	Work in such a way that there is a sense of accomplishment.
13		Play or participate in various forms of recreation
14	Psychological Needs	Learn, discover or satisfy the curiosity that leads to normal development and health, and use the available health facilities.

Table 1: The Fourteen Fundamental Needs (Alligood, 2014).

Henderson organised the nursing needs into different categories: physiological, psychological, spiritual and moral and sociological (Ahtisham and Sommer, 2015). They are structured in this way because Henderson believed that these categories are different domains of the individual (Pearson, 2012).

Nursing has a holistic approach to focus on the patient as a whole, rather than just their presenting problem, which is the approach when using the medical model (Jeffery, 2006). Henderson's nursing theory supports this by maintaining a holistic approach through highlighting how nursing care should consider different components rather than just the physiological needs. For example, how the psychological needs such as learning and communicating should be considered when aiding the patient to become independent, as their health is influenced by this. For example, a patient needs to communicate with the nurse to express their need to eliminate body waste. Additionally, Henderson says the patient's need to learn, leads to normal development (Petiprin, 2016). This holistic approach allows the nursing care for each animal to be individualised, as the needs for each patient will be slightly different.

Nursing Assessment

The first stage of the nursing process is carrying out a nursing assessment. During this stage, details about the patient's life and routine can be identified so nursing care can be individualised in a way to benefit them (Orpet and Jeffery, 2006). This can be carried out during the admission of the patient; the nurse can ask the owner a series of questions to build a picture of the patient's normal routine and any relevant history. If the patient has been admitted by the veterinary surgeon, once in the ward the nurse can complete the assessment over
the telephone with the owner. The assessment phase also allows the nurse to get the basis for the physiological aspects of the fundamental needs, such as respiratory and heart rate, from completion of a full physical examination.

Creating a relationship with the patient and client is very important as it allows the most accurate information to be obtained to base the assessment on. Conversations with the client allow the nurse to gain information regarding the patient's normal routine, including their likes and dislikes. During the assessment phase, the nurse can act as a helper to the patient by obtaining information from the owner that will benefit the patient during their hospital stay and reduce stress. For example, asking the owner what the patient's diet is at home, what time they like to eat and what their favourite treat is can be beneficial when trying to tempt the patient to eat after a period of anorexia. Acting as a helper to the patient is one form of patient-nurse relationship that Henderson outlines in her model and Table 3 shows how it can be applied when doing a nursing assessment (Alligood, 2014).

The nursing needs model provides structure to the assessment meaning certain aspects are less likely to be missed, because it has been provided in a list form. Although it does mean that nurses may forget to elaborate on things that are not included in the list (see *Table 2* for Henderson's nursing assessment form (Ahtisham and Sommer, 2015)). This can lead to

insufficient interventions because the information has not been provided. Additionally, one aspect of Henderson's model that has been maintained in the veterinary adaptation is numbering each need (*Table 3*), this provides more structure and makes it easier to refer to each need than an unnumbered system. Khatiban et al (2019) found that introducing a patient assessment form significantly improved the nurse's skill level as they could do a more thorough assessment, which in turn led to better evaluation of patient outcome. Therefore, this suggests the adaptation of Henderson's assessment form could benefit both the veterinary nurses and patients.

Henderson's 14 Components		Nursing Assessment of [Insert Patient Name] Assessment Findings
1	Breathing normally	
2	Eat and drink adequately.	
3	Elimination of body wastes	
4	Movement and Posturing	
5	Sleep and Rest	
6	Select suitable clothes-dress and undress	
7	Maintain body temperature	
8	Keep the body clean and well groomed	
9	Avoid dangers in the environment	
10	Communication	
11	Worship according to one's faith	
12	Work accomplishment	
13	Play or participate in various forms of recreation	
14	Learn, discover, or satisfy the curiosity	

Table 2: Henderson's nursing assessment form

To adapt Henderson's assessment form to make it more appropriate for veterinary patients, some of the fundamental needs have been changed. Instead of having long statements like Henderson has in her model, this has been changed to having one word regarding the area of assessment (*Table 3*). For example, need four 'Move and maintain desirable postures' (*Table 2*) has been changed to need 6 'mobilisation' (*Table 3*). Open questions have been incorporated into the assessment form underneath each subtitle so that more qualitative information can be gathered (*Table 3*). This is a significant amendment to Henderson's model as it makes the

model more concise and easier to understand, while maintaining the ability to yield a sufficient amount of information.

Other changes include: need two being separated into two components — rather than 'Eat and drink adequately' it is now 'Nutrition' and 'Hydration'. This means that more specific information about these aspects can be gathered. For example, it allows information regarding the type of diet and timing of feeds as well as what sort of bowl they like to drink out of and how often they drink to be gathered. This information means that their hospital stay can be made as similar to their life at home, making it less stressful for the patient.

Conversely, some needs have been incorporated into one to make one need that is overall more relevant to veterinary patients. Needs 10, 13 and 14 have been combined into one need titled 'Behaviour'. This is to make it more applicable to an animal patient than a human patient, because the way animals communicate, play and learn can be shown through their behaviour. By having questions incorporated into this one need it means information can be gathered about each of the original components in a concise manner.

Some of the needs from Henderson's model have been removed as they are not appropriate to animals. This includes the needs: 6, 9, 11 and 12. Some of these needs such as: avoiding dangers in the environment (need 9) and worship according to one's faith (need 11) are more relevant to how the owner cares for the patient at home, which the author does not see as applicable to the patient's hospital stay, which is why they have been removed from the assessment form. Overall, there are now eight needs compared with the original 14 in Henderson's model.

The adaptation also creates more structure to the physiological fundamental needs than the original model. Space to record the vital parameters has been included, so heart rate, respiratory rate, mucous membrane colour (MM) and capillary refill time (CRT) can be filled in. This is a modification to Henderson's original model as she did not incorporate these parameters. Recording these during the nursing assessment means that they can be referred to when the patient is being evaluated to see if the patient's condition has changed. An example of a completed patient assessment form is shown in *Table 3*.

Patient name: Sex: FN Age: 12		Weight: 4kg Breed: DSH	
Presenting problem: Heart failure			
Heart Rate	**Respiratory Rate**	**MM/CRT**	**Pulses**
260	40	Pale <2seconds	Good
Additional notes:	Medications: clopidogrel, benazepril and furosemide		

1 Breathe: Do they seem to not want to exercise or get tired easily? Do they have any effort? Any noise? Is the pattern regular?	Recently she doesn't go outside as much, seems to be sleeping more. Owner thinks she has some inspiritory effort, but a regular pattern.
2 Nutrition: What is their diet? How often do they eat during the day? Do they like to eat out of any particular type of bowl? What is their favourite treat?	Dry Whiskas food Adlib – food is left out all day She eats out of a small plate Favourite treat is Dreamies
3 Hydration: How often do they drink? Do they drink from outside sources e.g rain butt? What type of bowl do they like to drink out of?	She will not drink out of a bowl in the house – only from outside sources. Occasionally drinks from the sink in the house Owner is unsure what bowl she likes to drink out of – she offers shallow sided bowls in the house.
4 Urination and Defecation: How often do they urinate and defecate? Do they like to do it on any particular surface e.g grass or concrete? Do they have a command?	She goes to the toilet outside – owner is unsure how often. Has seen her go in the soil in the flower bed.
5 Maintaining body temperature: What is their temperature? Do they like to seek warmth? Do they get very hot in different conditions?	She likes to sleep in front of the fire/radiator and in the sun. She does get hot in the summer – her respiratory rate increases. Temperature: 37.9 degrees Celsius
6 Mobilisation: Do they enjoy going for walks/going out the house? Do they struggle to jump or go up the stairs? Do they have any medical problems such as arthritis?	She enjoys being outside of the house, normally in the summer she is outside most of the day. Hasn't noticed her struggling to jump onto the sofa, onto the garden fence etc.

7 Behaviour: How do they react to strangers? How do they react to pain? Do they have any favourite toys? How do they react if they are scared? Do they like to sleep a lot?	She is nervous at first around new people Sometimes hisses or tries to escape if painful She doesn't really play with toys – occasionally will chase string if you pull it around. Likes to sleep a lot in the morning and then evening.
8 Keeping the body clean: Do they like to groom themselves? Do you have to groom/bath them at all? Are they often very dirty?	She always grooms herself with no problems. She is never dirty.

Table 3: The veterinary adaptation of Henderson's patient assessment form.

Nursing Diagnosis

After the assessment, the nursing diagnosis is created by deciding which nursing interventions are needed for the patient, based on the information that has already been gathered. The main goal of this is to identify any problems that the patient already has or any potential problems that could arise from their stay in hospital (Welsh and Wager, 2013). After doing an assessment using the basis of the fundamental needs, a nursing diagnosis can focus on any problems that the patient is having with any of the needs (Welsh and Wager, 2013). An example of a nursing diagnosis can be seen in *Table 4*. It is important to note that while nurses can make a nursing diagnosis to decide which interventions are most appropriate for the patient, they cannot legally make a clinical diagnosis under the Veterinary Surgeons Act (1966) as this breaks the RCVS code of conduct (RCVS, 2020).

Planning

At the planning stage, the goals of the nursing care are outlined, and the way in which these will be met is planned (Orpet and Jeffery, 2006). It also allows the nurse to prioritise which needs are more important (Welsh and Wager, 2013). Following on from the above example in *Table 3,* which shows the patient has a respiratory rate of 40, if the patient is tachypnoeic and their oxygen saturation is decreasing, this need would be prioritised over the patient's need to be able to groom and keep themselves clean.

When using the nursing needs model to plan the nursing care it is important to remember the goal of the model, which is to make the patient become independent again. Particularly in a hospital environment, it is hard to allow the patient to be completely independent because they have to stay in a kennel. This is why the nursing interventions are designed to help the patient to be as independent as possible so when they leave the hospital their recovery is not hindered at all.

When using Henderson's model to plan the nursing care that is put in place, there is minimal structure to it. It describes the fundamental needs and outlines what interventions will help the patient become independent; it does not prioritise them or incorporate the goals of the care. There- fore, when adapting to veterinary patients an aspect used in the Orpet and Jeffery Ability Model has been included. Here they incorporate a 'short-term goal' section in their care plan template (Welsh and Wager, 2013). This means the goals can be written clearly (Nelson and Welsh, 2015). The added structure makes it clear to not just veterinary nurses but other healthcare professionals what is trying to be achieved. This means that anyone can glance at the nursing care plan and know what is being done to benefit the patient and improve their condition. *Table 4* shows the nursing diagnosis and planning aspect of the adapted version of Henderson's nursing model.

Nursing Need	**Nursing Diagnosis**	**Potential problem**	**Short term goal and Nursing Intervention**
1. Breathe	Tachypnoeic (40bpm),	Decrease in oxygen saturation Inspiratory and expiratory effort	Get respiratory rate within normal range. Reduce stress Monitor MM colour every hour Monitor respiratory rate and effort every hour
2. Nutrition	No problems with eating currently	Anorexia	Maintain nutrition, meet RER requirements. Offer 60g of GI dry diet in kennel
3. Hydration	Hydration status adequate	Dehydration	Maintain hydration Offer 100ml of water in a plastic bowl in kennel
4. Urination and defecation	Able to urinate and defecate	FLUTD from stress Urine scolding Constipation	Allow opportunities to urinate and defecate. Provide litter tray in kennel
5. Maintaining body temperature	Normal temperature	Hypothermia Hyperthermia	Maintain temperature within normal range Record temperature q4hrs
6. Mobilisation	Able to mobilise adequately	Joint stiffness	Do PROM if immobile for a long period of time

7. Behaviour	Showing normal behaviour	Stress related behaviours	Reduce stress, provide hides in the kennel
8. Keeping body clean	Able to groom herself	Not grooming due to stress Fur becoming matted and dirty	Reduce stress, groom fur if needed

Table 4: Nursing diagnosis and planning

Implementation

The implementation stage is where the nursing interventions that are outlined in the care plan are carried out. When carrying out the nursing care, it is important that the instructions are clearly written out in the care plan with specific details (Orpet and Jeffery, 2006). This means that anyone who implements the interventions knows exactly what to do. It is especially important with Henderson's theory as she states how the nurse works interdependently with other healthcare professionals (Alligood, 2014) and if instructions are not written clearly, they may be misunderstood by colleagues which could lead to them being wrongly implemented. By writing the instructions clearly it means there is less room for error in the interventions, which consequently aids the patient in regaining their independence. The interventions can be written using SMART objectives which are instructions that are specific, measurable, achievable, realistic and timed (Ballantyne, 2017). An example of a SMART objective for a tachypnoeic patient is as follows: aim to get respiratory rate within normal limits (20–28 breaths per minute (bpm)), measure respiratory rate and effort every hour. Using this principle provides additional detail so that the nursing intervention can be more objective (Ballantyne, 2017). A detailed SMART objective for a tachypnoeic patient can be seen in *Table 5*.

1. Breathe – nursing intervention using SMART principles	
Specific	Aim to get respiratory rate back to a normal rate (20-28bpm)
Measurable	Measure and record respiratory rate and effort
Achievable	24-hour nursing care available

Realistic	Patient's respiratory rate is within normal limits at home
Timed	Measure and record respiratory rate and effort every hour

Table 5 – SMART Objectives

Evaluation

Evaluation is one of the most important stages of the nursing process. If the care is not evaluated it would be unclear whether the nursing interventions were beneficial to the patient (Orpet and Jeffery, 2006). The evaluation aspect requires the nurse to re-examine the patient after the interventions have been carried out, then identify whether they have been successful or not (Orpet and Jeffery, 2006).

One disadvantage of Henderson's Model is that it has no structured section for evaluation of the nursing care pro- vided; therefore, it has been adapted to incorporate a way to evaluate the patient. By including the evaluation with the rest of the care plan it means it is less likely to be missed. It also encourages the nurse to write more detail; then, when re-evaluating the patient in the future this information can be referred to, which helps to make the evaluation an ongoing process.

In order for the evaluation to be thorough, it should be structured with questions such as:

- Has the goal been achieved?
- What needs to be changed?
- Has the patient's condition improved, deteriorated, or stayed the same?

By organising the evaulation process into questions it makes it easier to complete the evaluation, which will in- crease compliance (Orpet and Jeffery, 2006). *Table 6* is an example of patient evaluation after the nursing interventions have been carried out.

Nursing Need	**Has the goal been achieved?**	**Has the patient's condition improved, deteriorated or stayed constant?**	**What needs to be changed?**
1. Breathe	No – still tachypnoeic	Stayed constant	More diagnostic tests to determine why she is tachypnoeic. Continue to monitor respiratory rate and effort every hour.
2. Nutrition	Yes – RER has been met	Stayed constant	Nothing, she is eating. Continue to offer dry food to meet her RER requirements.

3. Hydration	Yes – hydration adequate	Stayed constant	Nothing, she is hydrated. Continue to offer water in kennel in a plastic bowl.
4. Urination and Defecation	No - Hasn't passed urine or faeces in litter tray since start of hospitalisation	Deteriorated	Provide different type of litter Palpate bladder to evaluate size Reduce stress – cover front of kennel so she feels hidden
5. Maintaining Body temperature	Yes – temperature within normal range	Stayed constant	Nothing, temperature is normal. Continue to monitor q4hrs.
6. Mobilisation	Yes – she is moving around her kennel easily. Climbs on top of hide to sit up there.	Stayed constant	Nothing, happy in kennel. Continue to observe whether she moves around or not.
7. Behaviour	Yes – she is showing no signs of stress behaviour	Stayed constant	Nothing – continue to reduce stress (provide hides, keep ward quiet)
8. Keeping body clean	Has not been observed grooming herself.	Stayed constant as she is not visibly soiled.	Nothing – continue to monitor her and check she isn't visibly soiled. If her fur is soiled, wash or brush out.

Table 6: Patient evaluation

The aim of evaluation is to make sure that the nursing care provided is gold standard; that it is improving the patient's condition and increasing their independence as Henderson would suggest in her theory.

<u>Recommendation for change</u>

There is an abundance of literature about the use of nursing models and care plans in veterinary practice. This literature has revealed that there are some common themes as to why nursing care plans are not utilised fully, these include: lack of education on their benefits; lack of time to complete them; and the added paperwork that the care plan creates (Nelson and Welsh, 2015). However, it is important to remember the advantages of using care plans as they provide systematic care for the patient, give the nurse more responsibility over the patient's nursing interventions and ensures that the care is holistic (Nelson and Welsh, 2015). To mitigate the issue of time constraints and added paperwork, the nursing care plan could be

incorporated into the admission and hospitalisation form, if it is bundled together it means additional forms do not need to be printed off, saving time. Furthermore, to be more environmentally friendly and limit paper usage, the care plan template could be made digital on the patient's file. This would mean updates could be made electronically and the patient's progress could easily be seen.

Conclusion

Henderson's nursing need theory is a good basis for a theory as it incorporates 14 fundamental needs that are relevant to what nursing care needs to be focused on in order to help the human patient become more independent. However, some of the needs are not applicable to veterinary patients, like their inability to worship a faith or wear clothes. Therefore, when adapting this model, some of the needs should be modified so that they can be used on animals.

The nursing process is a significant basis for nurses to structure their care for their patients. However, Henderson's theory does not necessarily link closely to the process as it only mentions the 14 fundamental needs and not the need for a nursing diagnosis, implementation, or evaluation. Consequently, to improve this model it has been modified so that these aspects of the nursing process are easier to do for patients.

References:

Ahtisham T, Sommer J. Integrating Nursing Need Theory and Process into Practice; Virginia's Henderson Need Theory. International Journal of Caring Sciences. 2015;8(2):443-450

Alligood M. Nursing Theorists and their work, Google Books. 2014.https:// books.google.co.uk/books?hl=en&lr=&id=l7stDwAAQBAJ&oi=fnd&pg =PP1&dq=Alligood,+M.+(2014)+Nursing+Theorists+and+their+work, +9th+ed.,+Elsevier,+14-15&ots=yVwOTYQSdc&sig=5R3LfwcaOaMKy HWLzqK7KPYfvo8#v=onepage&q&f=false (accessed 14 Dec 2019)

Ballantyne H. Writing nursing care plans. In: Veterinary Nursing Care plans: Theory and Practice. 1st ed. Taylor and Francis Group; 2017: 87-89

Bowes V. Making sense of nursing care models part . Veterinary Practice Today. 2015; 3(4) https://vetcommunity.com/vs/wp-content/up- loads/2015/07/VPT_3-4_July2015.pdf (accessed 24 September, 2020)

Gonzalo A. (2014) 'Virginia Henderson: Nursing Need Theory' available at https://nurseslabs.com/virginia-hendersons-need-theory/ [Accessed 16 Dec, 2019]

Jeffery A. Moving away from the medical model. Veterinary Nursing Journal. 2006;21(12):13-16

Khatiban M, Tohidi S, Shahdoust M. The effects of applying an assessment form based on the health functional patterns on nursing student's attitude and skills in developing the nursing process. Int J Nurs Sci. 2019;6(3):329-333. doi:10.1016/j.ijnss.2019.06.004

Lock K. Reflections on designing and implementing a nursing care plan. The Veterinary Nurse. 2011;2(5):272-277. doi:10.12968/ vetn.2011.2.5.272

Nelson D, Welsh P. Using the ability model to design and implement a patient care plan. The Veterinary Nurse. 2015;6(3):141-149. doi:10.12968/ vetn.2015.6.3.141

Orpet H. How well do you know your patient? The need for nursing assessment. Veterinary Nursing Journal. 2011;26(7): 242-245. doi.org/10.1111/j.2045-0648.2011.00069.x

Orpet H, Jeffery A. Moving towards a more holistic approach. Veterinary Nursing Journal. 2006;21(5):19-22. doi:10.1080/17415349.2006.11013476

Pearson A. Nursing Models for Practice. In: Crisp J, Douglas C, Rebeiro G, eds. Potter and Perry's Fundamentals of Nursing. 4th edn, Elsevier, Australia; 2012

Petiprin A. Henderson's Nursing Need theory. 2016. https://nursing-theory. org/theories-and-models/henderson-need-theory.php (accessed 16 December, 2019)

RCVS. Treatment of animals by unqualified persons. 2020. https://www. rcvs.org.uk/setting-standards/advice-and-guidance/code-of-profession- al-conduct-for-veterinary-surgeons/supporting guidance/treatment-of- animals-by-unqualified-persons/?print=true (accessed 14 July, 2020)

Tanner CA. Thinking like a nurse: a research-based model of clinical judgment in nursing. J Nurs Educ. 2006;45(6):204-211. doi:10.3928/01484834-20060601-04

Welsh P, Wager C. Veterinary nurses creating a unique approach to patient care: part one. The Veterinary Nurse. 2013;4(8):452-459. doi:10.12968/ vetn.2013.4.8.452

Wager C, Welsh P. Veterinary nurses creating a unique approach to patient care: part two. The Veterinary Nurse. 2013;4(9):520–526. doi:10.12968/ vetn.2013.4.9.520